Proposal — Building Management System

To: Megaworld Corporation, 9/F Two World Square, 24th Upper McKinley Road, Taguig City **Attention:** Mr. Rome Amiel P. Gonzales **Project:** Kingsford Hotel Bacolod — Manhattan Street, The Upper East, Bacolod City, Negros Occidental **Subject:** Complete Supply, Delivery, Installation, Testing and Commissioning of the Building Management System **Date:** 2026-04-28 **Proposal validity:** 60 days from issue

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1. Cover letter

We thank Megaworld Corporation for the opportunity to propose on the BMS scope of the Kingsford Hotel Bacolod project. This proposal addresses the complete supply, delivery, installation, testing and commissioning of the Building Management System per the Construction Bulletin documents issued by the project's MEP consultant (RJ Calpo & Company, Inc.) and the standards published in Megaworld's DRC-004-2024 *Revised BMS Standards Condotels*.

Our scope covers the eight DDC field-panel zones identified in the consultant's points-list package — chiller plant, roof-deck plant, lower-ground steam-boiler / hot-water plant, casino MVAC, basement / ground-floor / second-floor BOH, and the third-floor amenity zone — together with the head-end at the Lower Ground IT/BOH room and the BACnet/IP backbone routed through the building's service-core IDF stack.

We have flagged 15 clarification items in Section 8 of this proposal. None are scope-redefining; addressing them refines the BOQ at shop-drawing stage. The most material is the wording mismatch between the cover letter ("Rehabilitation") and the technical evidence (Construction Bulletin No.8 dated 2025-11-05 with no existing-system inventory) — we have proceeded on the basis of new construction.

We look forward to your review.

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2. Executive summary

Item	Value
Project type	Greenfield BMS for a hospitality property

Item	Value
	with casino-floor adjacency
BMS point count	744 monitored / controlled points across 109 equipment instances
BMS DDC field panels	8 panels at plant rooms and per-floor BOH IDF positions
BACnet/IP backbone + 11 IDF edge switches	Riser through service-core stack from Basement-1 to Roof Deck
BACnet MS/TP field bus	~250 m total backbone distributed across 8 segments
Field cable installed	~5,170 m of FRLS cable
Project duration (NTP to handover)	46 weeks
Proposal grand total (incl. 12% VAT)	PHP 22,036,702

The proposal addresses the consultant's full BMS scope as issued — Mechanical (Part B), Plumbing (Part C, domestic hot water), and the equipment-level P&IDs in BMS-03. Energy submetering is included for the major load centers per Megaworld DRC-004; the EL points-list partition (main-board / generator / UPS / lighting BMS monitoring) is not in scope until the consultant issues the addendum (clarification Q-008).

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3. Project background

The Kingsford Hotel Bacolod is a hospitality property in The Upper East, Bacolod, with a hotel tower, a casino floor on the second mezzanine, and amenity / function-room spaces on the second and third floors. The mechanical plant is centralized: chillers and chilled-water pumps at the second-level chiller room, cooling towers and roof-deck DOAS / PAHU at the roof deck, steam boilers and the lower-zone domestic-hot-water set at lower ground. The hot-water system is dual-zone with a roof-deck high-zone calorifier / heat-pump / recirculating-pump set serving the upper guestroom floors.

The BMS scope follows Megaworld's DRC-004-2024 *Revised BMS Standards Condotels*: BACnet/IP at the head-end with BACnet MS/TP at the field bus, FRLS-jacketed cables per BFP IRR, and energy submetering at the major load centers. The consultant's points-list package — the TUEC BMS-01 / BMS-02 / BMS-03 sheets

dated October 2025 (reviewed by Megaworld Engineering Design Department on 5 December 2025) plus the MC Standards parts B and C — defines the equipment universe and the per-equipment monitoring + control narrative.

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4. Scope of work

The scope follows the 7-level Work Breakdown Structure detailed in the project's working documents. At a glance:

- **1.0 Project Management & Engineering** — full-duration PM, design, shop drawings, submittals through Megaworld Engineering Design Department review, and FAT.
- **2.0 Material Supply** — head-end (server with warm-standby supervisor, workstation, graphics PC, UPS, rack), network (managed core switch, 11 IDF edge switches, fibre + Cat6 backbone), 8 BMS DDC field panels with controllers + I/O modules + 25%/15% spare per AB-Run-6 spare strategy, BMS-supplied field devices (temperature, humidity, pressure, flow, CO/CO2/VOC, oxygen, pH/conductivity sensors and selected modulating actuators), 6 multifunction power meters, integration interfaces, and FRLS cable + branch conduit.
- **3.0 Installation** — site mobilization, containment, cable pulling, panel installation, field-device installation, network and head-end installation, pre-functional point-to-point testing.
- **4.0 Programming & Configuration** — controller-level sequence-of-operations per the consultant's narrative, head-end supervisor configuration (Desigo CC), 38 graphics pages with the runtime / energy / demand-cycling reports required by DRC-004, alarm routing, trend coverage at 95% AI / 100% AO / 50% DI / 100% DO / 80% HLI per the project's reasoned trend strategy, and integration to the chiller plant manager, VFDs, BTU meters, Air Ionizers, FACP gateway, and power meters.
- **5.0 Testing & Commissioning** — pre-functional, functional sequence-of-operations testing, integrated systems testing with the ME / EE / Casino fit-out / FDAS contractors, owner / consultant SAT, as-builts, and O&M manuals.
- **6.0 Training & Handover** — operator basic + advanced training, maintenance technical training, full handover documentation package.

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5. Technical proposal

5.1 System architecture

Star-and-tree backbone. The head-end at the Lower Ground IT/BOH room hosts a primary BMS server (Dell PowerEdge with Siemens Desigo CC supervisor, subject to the brand confirmation in Q-004), a warm-standby supervisor server, an operator workstation, a graphics engineering PC, a head-end UPS (3 kVA online, 30-minute runtime), and a 12U enclosed rack. The core switch terminates a fibre + Cat6 backbone routed through the service-core IDF stack on the building's west end, with one IDF edge switch per floor reaching the eight BMS DDC field panels. Field-side BACnet MS/TP daisy-chains run from each panel to the equipment skids in that panel's served zone.

The architecture follows Megaworld's DRC-004 BACnet/IP + MS/TP convention. Cabling is FRLS-jacketed throughout, complying with BFP IRR Section 10.2.5.5.

(Detailed mermaid topology in working document A5; switch and IDF inventory in the same document.)

5.2 Equipment universe

The BMS monitors and controls 109 equipment instances enumerated per-tag from the consultant's BMS-01 / BMS-02 / BMS-03 / MC Standards Parts B and C:

Plant area	Instances	Examples
Chiller plant (2nd Level)	16	CH-1/2/3, PCHWP-1/2/3, SCHWP-1/2/3, COWP-1/2/3, CHW supply / return / bypass headers, condenser-water header
Roof-deck plant	11	CT-1/2/3 + common, DOAS-RD.1/2, PAHU-r ×2, HWT-HZ, HP-HZ, RP-HZ, HWH-HZ
Lower Ground plant	8	SB-1/2 boilers, HWT-LZ, HP-LZ, RP-LZ, HWH-LZ
Casino MVAC (2nd	5	DOAS-2M, AHU-

Plant area	Instances	Examples
Mezzanine)		2M.1/2, Air Ionizers ×2
2F BOH	12	AHU-B.1/2/3, AHU-PF/EL/FR2/FR3, PAHU-B.1/2/3, PAHU-PF, PAHU-FR
GF BOH	3	AHU-1.1/1.2/1.3
Basement	1	PAHU-0.1
Exhaust fans	48	TEF-1.1..1.4, TEF-2.x, EF-2.x, TEF-3.x, EF-3.x, TEF-B.x, EF-B.x and others
Power metering	6	MPM-MAIN, MPM-CHILLER, MPM-AHU-2F/GF, MPM-LIGHT-A/B
FACP gateway	1	FACP-GW

The point budget across these instances is **744 I/O points** (200 AI / 58 AO / 286 DI / 17 DO + 70 HLI sub-points + 113 network drops). Controller sizing applies the standard 1 DDC per ~40 physical I/O rule; the resulting allocation is 19 controllers across the 8 panels with a per-class spare strategy of 25% AI/AO and 15% DI/DO.

5.3 Cable schedule basis

The cable schedule is sized from a per-equipment-tag enumeration of 213 routes. In the absence of architectural floor plans (clarification Q-005), cable lengths are estimated from a project-specific typical-ranges table, reasoned per cable context:

Context	Typical length	Basis
Plant-room same-room (chiller plant)	12 m	9 m horizontal + 1 m vertical drop + 1 m termination + 1 m cornering, calibrated against typical hospitality chiller plant

Context	Typical length	Basis
		1500-3000 RT
Plant-room same-room (lower-ground boiler/HWL)	12 m	as above, with combined boiler + HWL envelope
Roof-deck plant area (CT, DOAS-RD, PAHU-r)	15 m	12 m horizontal + 1.5 m vertical + 1 m termination + 0.5 m cornering — rooftop equipment more spread out for thermal isolation
Casino MVAC (2nd Mezzanine)	18 m	15 m horizontal + 1.5 m vertical + 1 m termination + 0.5 m cornering — casino MEP corridor
2F BOH (AHU/PAHU + exhaust fans)	25 m	22 m horizontal + 1 m vertical + 1 m termination + 1 m cornering — large 2F BOH program
GF BOH	25 m	as above
Basement-1 (extensive equipment-room scatter)	28 m	25 m horizontal + 1 m vertical + 1 m termination + 1 m cornering
3F amenity (long	35 m	32 m horizontal

Context	Typical length	Basis
corridor + amenity perimeter)		+ 1 m vertical + 1 m termination + 1 m cornering, calibrated against ECE-09 footprint with doorway-as-scale-reference (0.9 m)
BMS DDC panel power feed	10 m	7 m horizontal + 1.5 m vertical + 1 m termination + 0.5 m cornering — service-core feeder run

The cable-schedule grand total comes to ~5,170 m of FRLS cable across field-control, BACnet/IP / MS/TP, fibre riser, and panel-power categories. (Full per-cable detail and audit XLSX in working document A3.)

5.4 Programming and graphics

The programming scope follows the Description-of-Operations narrative for each equipment class in MC Standards Parts B and C. The graphics package (38 pages — 6 simple, 24 medium, 8 complex — per working document B2) includes a building-overview home page, per-system pages (chilled water / hotel air-side / casino MVAC / domestic hot water / steam boiler / exhaust / energy metering / FACP summary), per-floor floor-plan views, and the operator-utility pages (alarms / trends / schedules / energy reports / user management / network health).

Reports cover runtime totalization (daily / weekly / monthly per equipment) and the energy-savings, load-cycling, and maximum-demand-cycling functions called for in the BMS-01 narrative. Trend coverage is 95% AI / 100% AO / 50% DI / 100% DO / 80% HLI, reasoned per the project’s regulatory and energy-management context (full basis in working document B1-trend-strategy.yaml).

5.5 Standards and compliance

- **Cabling:** FRLS jacket throughout per Philippine BFP IRR Section 10.2.5.5 and Megaworld DRC-004 Section 9.3.
- **Field-bus protocol:** BACnet/IP at head-end + BACnet MS/TP at field per Megaworld DRC-004.
- **Casino MVAC IAQ:** CO and CO2 sensors at Casino DOAS return-air per gaming-board minimum requirements (subject to Q-012 confirmation).
- **Energy submetering:** Multifunction meters at the major load centers per Megaworld DRC-004.
- **Submittal workflow:** Megaworld Engineering Design Department review per the precedent established in Construction Bulletin No.8.

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6. Project schedule

Phase	Weeks	Deliverable
Mobilization + Engineering kick-off	1-4	PO + design freeze + site mobilization
Engineering, design, shop drawings	1-9	Megaworld-reviewed shop-drawing package
Procurement (long-lead head-end + chiller HLI gateway)	2-14	Server + supervisor + chiller-plant gateway on site
Procurement (containment + cable)	8-14	Cable + conduit + tray accessories
Containment installation	12-24	Cable tray + branch conduit
Cable pulling + dressing + terminations	16-28	All BMS cable installed
Field-device + DDC panel + head-end installation	24-32	Equipment installed and powered
Pre-functional P2P	30-36	678 test items per B3

Phase	Weeks	Deliverable
testing		
Functional testing	34-40	Sequence-of-operations validated per equipment
Integrated systems testing	38-42	Joint test with ME / EE / Casino fit-out / FDAS
Owner / consultant SAT	42-44	Megaworld FM + RJ Calpo & Co. acceptance
As-builts + O&M + Training + Handover	42-46	Documentation + training delivered

Total project duration (NTP to substantial completion): 46 weeks (~10.5 months). Warranty period: 12 months from substantial completion.

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7. Stated assumptions

The proposal has been prepared on the following key assumptions (the full ledger is in working document 07-assumptions.md):

1. **Greenfield project.** The cover letter says “Rehabilitation”; the EE Plan and BMS Construction Bulletins are issued for new construction with no existing-system inventory in the supplied documents. Cost impact of misclassification ~PHP 2-4M.
2. **Architectural floor plans are not provided.** Cable lengths use the project-specific typical-range table disclosed in Section 5.3.
3. **Mechanical (HVAC) layouts are not provided.** Equipment instances are taken 1:1 from the BMS-01/02 tabulation; field-device counts on guestroom-side derive from the centralized DOAS architecture (no per-room FCU monitoring in BMS scope per consultant’s points list).
4. **Brand selections** use Siemens for BMS / FDAS / SCADA and Dell for PCs / server pending confirmation against Megaworld DRC-004 Section 9. Brand substitutions at shop-drawing stage may shift unit costs ±5-15%.
5. **EL (electrical) BMS partition** is limited to the major-load-center power meters per Megaworld DRC-004; main-board / generator / UPS / lighting BMS monitoring is not in scope unless the consultant issues an EL points-list addendum.

6. **Plumbing BMS scope** is limited to domestic hot water per MC Standards Part C; sump / fire / transfer pumps and sewage equipment are not in BMS scope.
7. **Service-core / IDF stack** is single-shaft on the west end of every floor (per ECE auxiliary layouts).
8. **BMS panel power feeds** come from local DBV-MECH / DBV-BMS at 240V single-phase, supplied by the EE contractor. Per-feeder circuit IDs are placeholders pending vector re-export of EE-21/22/23 (clarification Q-014).

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8. Inclusions / Exclusions / Clarifications

(Full text in working document C3-inclusions-exclusions.md.)

Headline exclusions:

- Mechanical equipment supply (chillers, pumps, AHUs, PAHUs, DOAS, boilers, calorifiers, heat pumps, cooling towers, exhaust fans, Air Ionizers).
- Civil / structural works (slab penetrations, equipment plinths).
- BMS panel 240V power feeders (EE contractor).
- EL points-list partition pending consultant addendum.
- Sump / fire / transfer pumps and sewage BMS monitoring.
- Per-guestroom FCU monitoring (architecture is centralized DOAS).
- FDAS hardware (only the FACP BACnet gateway summary contact is in BMS scope).
- Demolition / existing-system removal (Greenfield).
- Post-handover preventive maintenance contract beyond year 1 (offered separately).

Optional items priced separately:

- 1-year preventive maintenance contract (annual basis).
- Extended warranty (years 2-5).
- EL points-list partition (priced on issue of consultant addendum).

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9. Commercial proposal

Section	Subtotal
1.0 Project Management & Engineering	PHP 1,688,000

Section	Subtotal
2.0 Material Supply	PHP 10,829,165
3.0 Installation	PHP 1,845,295
4.0 Programming & Configuration	PHP 557,880
5.0 Testing & Commissioning	PHP 456,720
6.0 Training & Handover	PHP 91,200
Base total (excluding optional)	**PHP 15,468,260**
Overhead and margin (20%)	PHP 3,093,652
Cost + overhead	PHP 18,561,912
Contingency (6.0% — reasoned per project D3 risk profile)	PHP 1,113,715
Cost + contingency	PHP 19,675,627
VAT (12% standard PH output VAT)	PHP 2,361,075
Grand total (inclusive of VAT)	**PHP 22,036,702**

Payment milestones

Milestone	% of contract	Trigger
Down payment (mobilization)	20%	NTP + signed contract
Materials on site (long-lead complete)	30%	M-03 milestone (week 14)
Containment + cable 80% complete	20%	M-04 milestone (week 24)
P2P complete	15%	M-06 milestone (week 36)
Substantial completion (handover)	10%	M-09 milestone (week 46)
Retention release	5%	End of warranty period (week 98)

Currency: Philippine Peso (PHP). All figures are inclusive of standard 12% VAT.

Validity

This proposal is valid for 60 days from the date of issue. Extensions can be agreed in writing.

10. Acceptance

Acceptance is via signed Notice to Proceed and contract execution. Counter-signed acceptance below acknowledges the scope and pricing of this proposal subject to clarifications resolved at shop-drawing stage.

Authorised by Megaworld Corporation	Authorised by Bidder
Name:	Name:
Title:	Title:
Signature & date:	Signature & date: